Nikolas Zacharopoulos

Tel.:   6974607996
            2106516742
Address: Department of Product and Systems Design Engineering
            Konstantinoupoleos 1
            84100 Hermoupolis
            Greece
E-mail: nzacharo@aegean.gr

A. ACADEMIC TRAINING

Degrees earned

Ph.D.   University of Michigan, Department of Materials Science and Engineering
            "Dynamic Simulation of Dislocation Microstuctures Ahead of a Mode III Crack"
            December 1997, Thesis advisor: Professor David J. Srolovitz

M.Sc.   University of Michigan, Department of Materials Science and Engineering
            "Simulation of Grain Growth During Directional Annealing"
            April 1995, Thesis advisor: Professor David J. Srolovitz

Diploma National Technical University of Athens, Dept. of Mining and Metallurgical
            Engineering
            Metallurgy major
            "Mechanical behavior of Hydrogen Charged Metals"
            June 1992, Thesis advisor: Assistant Professor: Christos N. Panagopoulos

Publications:

Scintific Journal Publications:

"Coarse-graining using pre-tabulated potentials: Liquid benzene", Zacharopoulos, N., Vergadou, N., and Theodorou, D. N., Journal of Chemical Physics, Vol. 122, No. 24, art. no. 244111, 2005.

"Molecular Dynamics Simulations of Electric Field Poled Nonlinear Optical Chromophores Incorporated in a Polymer Matrix", Makowska-Janusik, M., Reis, H., Papadopoulos, M. G., Economou, I. G., and Zacharopoulos, N., Journal of Physical Chemistry B, Vol. 108, No. 2, pp. 588-596, 2004.

"Discrete Dislocation Simulations of the Development of a Continuum Plastic Zone ahead of a Mode III Crack", Zacharopoulos, N., Srolovitz, D. J., and LeSar, R., Journal of Mechanics and Physics of Solids, Vol. 51, No.4, pp. 695-713, 2003.

"Morphology and Organization of Poly(propylene imine) Dendrimers in the Melt from Molecular Dynamics Simulation", Zacharopoulos, N. and Economou, I. G., Macromolecules, Vol. 35, No. 5, pp. 1814-1821, 2002.

"Nonuniform and Directional Grain Growth Caused by Grain Boundary Mobility Variations", Holm, E. A., Zacharopoulos, N., and Srolovitz, D. J., Acta Materialia, Vol. 46, No. 3, pp. 953-964, 1998.

"Dynamic Simulation of Dislocation Microstructures in Mode III Cracking", Zacharopoulos, N., Srolovitz, D. J., and LeSar, R., <u>Acta Materialia</u>, Vol. 45, No. 9, pp. 3745-3763, 1997.

"Cathodic Hydrogen Charging and Mechanical Properties of Copper", Panagopoulos, C. N. and Zacharopoulos, N., <u>Journal of Materials Science</u>, Vol. 29, pp. 3843-3846, 1994.

Conference Proceedings:

Zacharopoulos, N., Vergadou, N., and Theodorou, D. N., "Transition from the atomistic to the coarse-grained representation simulation – liquid benzene example", <u>Tziola Publishing</u>, 1125, 2005.

Margaritis, N. A., Vergadou, N., Zacharopoulos, N., and Theodorou, D. N., "Coarse-graining methodology in rigid polymer simulation", <u>Tziola Publishing</u>, 45, 2003.

Zacharopoulos, N, Srolovitz, D. J., and LeSar, R., "Dynamic Simulation of Crack Propagation with Dislocation Emission and Migration", <u>Materials Research Society</u>, Vol. 409, pp. 199-204, 1995.

Zacharopoulos, N, Holm, E. A., and Srolovitz, D. J., "Simulation of Grain Growth During Directional Annealing", <u>Materials Research Society</u>, Vol. 362, pp. 271-276, 1994.

Selected Presentations:

5th <u>Panhellenic Chemical Engineering Conference,</u> Thessaloniki, May, 2005: oral presentation.

4th <u>Panhellenic Chemical Engineering Conference,</u> Patras, May, 2003: oral presentation.

<u>NATO-ASI Workshop on "Computer Simulation of Surfaces and Interfaces"</u>, Albena, Bulgaria, September, 2002: poster presentation.

<u>International Workshop on "Molecular Modeling in Membrane Research"</u>, Teltow, Germany, May, 2002: oral presentation.

<u>European Research Conference on "Complex Polymer Structures"</u>, Helsinki, Finland, August, 2001: oral presentation.

5th <u>International Conference on the Fundamentals of Fracture (ICFF-V),</u> NIST, Gaithersburg, MA, August, 1997: oral presentation.

<u>Materials Research Society 1997 Spring Meeting</u>, San Francisco, CA, April, 1997: oral presentation.

<u>The Minerals, Metals and Materials Society Annual Meeting</u>, Orlando, FL, February, 1997: poster presentation.

<u>The Minerals, Metals and Materials Society Fall Meeting</u>, Cincinnati, OH, October, 1996: oral presentation.

<u>Materials Research Society 1995 Fall Meeting</u>, Boston, MA, December 1995: oral presentation.

<u>Materials Research Society 1994 Fall Meeting</u>, Boston, MA, December 1994: oral presentation.

<u>96th American Ceramics Society Annual Meeting</u>, Indianapolis, IN, April, 1994: oral presentation.

B. WORK EXPERIENCE

NRCPS "Demokritos"
Institute of Physical Chemistry, Research Fellow, Athens (05/03-05/07).
Development of a computational method to equilibrate complex polymer molecules.
Development of a computational method to predict the mechanical behavior of a semi-crystalline polymer.

Institute of Physical Chemistry, Post-Doctoral Researcher, Athens (02/00-04/03).
Study of the topology and solubility of dendrimers via molecular mechanics and dynamics methods, as well as Monte Carlo simulation. Development of a computational method for the coarse-grained simulation of rigid polymers for membrane applications.

University of the Aegean
Department of Product and Systems Design Engineering, Instructor, Syros (09/07-06/08).
Independent teaching of the following courses: Simulation – 7th semester, Materials Selection for Design Applications – 9th semester, New Materials – 7th semester, Materials – 4th semester, graduate course Materials.

Department of Product and Systems Design Engineering, Instructor, Syros (09/05-06/07).
Independent teaching of the following courses: Simulation – 7th semester, Materials Selection for Design Applications – 9th semester, Introduction to Probability and Statistics – 4th semester, Materials – 4th semester.

Department of Product and Systems Design Engineering, Instructor, Syros (09/04-06/05).
Independent teaching of the following courses: Simulation – 7th semester, Programming Technologies and Methodologies I (C Programming Language) – 2nd semester, Introduction to Probability and Statistics – 4th semester. Lab assignments in the course of Programming Technologies and Methodologies I.

Department of Product and Systems Design Engineering, Instructor, Syros (02/05-09/07).
Supervision of two undergraduate diploma theses pertaining to materials restrictions to product design.
Supervision of two master's theses pertaining to materials use in specific design applications.

Department of Product and Systems Design Engineering, Instructor, Syros (02/04-06/04).
Independent teaching of the graduate course Materials.

Department of Product and Systems Design Engineering, Instructor, Syros (09/02-06/04).
Independent teaching of the following courses: Statics – 3rd semester, Strength of Materials – 5th semester and Materials – 4th semester.

University of Michigan
Department of Materials Science and Engineering, Research Assistant, Ann Arbor, MI (09/92-12/97).
Study of the plastic zone ahead of a mode III crack using dislocation dynamics simulation (fast multipole method – FMM) and elasticity theory.
Investigation of the effect of a moving heat source on grain growth using Monte Carlo simulation.

Department of Materials Science and Engineering, Teaching Assistant, Ann Arbor, MI (01/94-04/94).
Recitation sessions, test and homework assignments preparation and grading for the undergraduate course Introduction to Materials Science and Engineering (required course for the Engineering majors).

Los Alamos National Laboratories
Center for Materials Science, MST Division, Graduate Research Assistant, Los Alamos, NM (05/94-08/94)
Development of a dynamics simulation method to investigate the interaction of dislocation microstructures with a loaded crack.

Hellenic Aerospace Industry
Division of Studies, Research and Development, Research Assistant, Schimatari (08/91-09/91).
Non-destructive testing using ultrasound on composite aircraft parts.

C. AWARDS – DISTINCTIONS

2006-2008: Who's Who in Science and Engineering, Who's Who in the World
1993-1994: Evgenidion Foundation Scholarship
1992-1997: Fulbright Fellowship

D. OTHER ACTIVITIES

Computational proficiency
Excellent knowledge of C, FORTRAN, perl, tcl and other script languages
Extensive experience in UNIX operating systems (Sun Solaris, HP-UX, AIX, IRIX, True64)
Linux, DOS, Windows, MacOS
Extensive knowledge of molecular simulation packages Cerius2, InsightII, Materials Studio
Knowledge of mathematical software: Maple, Mathematica, MATLAB

Other
Languages: English, German